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STUDY TO EVALUATE OIL AND GAS
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RESOURCES ON FEDERAL LANDS...

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ANNUAL REPORT TO CONGRESS

Study to Evaluate Oil and Gas Development,
Wilderness Characteristics, and Wildlife Resources on
Federal Lands in the Central Arctic Area of Alaska

Required by: Section 1001, Alaska National Interest
Lands Conservation Act, December 2, 1980

Prepared by: Bureau of Land Management
U.S. Department of the Interior

December 1981

DEFINITIONS

ADFG	Alaska Department of Fish and Game
ALUC	Alaska Land Use Council
ANILCA	Alaska National Interest Lands Conservation Act
ANWR	Arctic National Wildlife Refuge
ASRC	Arctic Slope Regional Corporation
Aufeis	Overflow Ice
BLM	Bureau of Land Management
DNR	Department of Natural Resources
DOT	Department of Transportation
FWS	U.S. Fish and Wildlife Service
GS	U.S. Geological Survey
NPR-A	National Petroleum Reserve in Alaska
NPS	National Park Service
NSB	North Slope Borough
TAPS	Trans-Alaska Pipeline System
TLUI	Traditional Land Use Inventory

INTRODUCTION

Pursuant to Public Law 96-487, the Alaska National Interest Lands Conservation Act (ANILCA) of 1980, the Secretary of the Interior is required to initiate and carry out an oil and gas study on the Federal lands in the Central Arctic Area of Alaska. The study is mandated by requirements of sections 1001 (overall study), 1004 (wilderness), 1005 (wildlife), and 1006 (transportation) of the Act. The Central Arctic Area is generally described as those lands located north of 68° north latitude and between the National Petroleum Reserve in Alaska (NPR-A) to the west and the Arctic National Wildlife Refuge (ANWR) to the east. The overall purpose of the study is to estimate oil and gas resource potential; review and evaluate alternative transportation routes, wilderness characteristics, and wildlife resources; and analyze the impacts of oil and gas development on Bureau of Land Management (BLM) administered lands within the Central Arctic Area.

Section 1001 specifies that the Secretary shall submit the study and his findings to the President and to the Congress no later than December 2, 1988, with interim progress reports due annually. This progress report is the first of the annual status reports to be submitted under the section 1001 requirement. It summarizes the scoping actions taken to initiate the study, the coordination efforts; the objectives, work conducted, and evaluations for further work needed for individual studies; and future work planned.

STUDY ACTIVITIES

Work on the Central Arctic Area Study was initiated in February 1981. The lead responsibility for the study was assigned to the BLM Fairbanks District Office. An interdisciplinary team was formed to initiate an inventory and analysis of resources within the Central Arctic Area and to determine the impacts of upland oil and gas exploration and development.

A systematic review is underway to evaluate existing wilderness characteristics of the public lands within the Central Arctic Area and to determine the relationship of these wilderness values to existing units of the National Wilderness Preservation System in the adjacent Gates of the Arctic National Park and Preserve and the ANWR (ANILCA section 1001(c)(4) and 1004).

The team has begun an evaluation of the resources associated with the Congressionally identified corridor for oil and gas pipelines and related transportation needs for access across the Central Arctic Area from the Kurupa Lake area and the watershed of the Killik River to the Trans-Alaska Pipeline System (TAPS) corridor (ANILCA section 1431(j)).

SCOPING AND STUDY DEVELOPMENT

Before field work started in early 1981, BLM initiated a scoping effort to develop a study plan and prepare a public participation plan, identify data needs and acquire available data, and establish coordination with State and Federal agencies and Native Corporations.

On April 30, 1981, a call for interest and comments in the Federal Register included the Central Arctic Area lands along with other lands covered by section 1008 of the Act. Analysis of the expressions of interest prepared on June 26, 1981, revealed high industry interest for oil and gas on the Central Arctic Area lands.

After reports are completed for the 1981 field study, final scoping will be done to refine the study effort based on preliminary results and findings of the 1981 field season. Public input, as well as input from the State, Native Corporations, and others will be considered, along with the field study results, to set the course for the final report and recommendations.

COORDINATION

Extensive coordination with other government agencies and State and local governments is specified in section 1001 and section 1006. The BLM has established contact for coordination and consultation as follows:

Federal Government

U.S. Fish and Wildlife Service (FWS)

Coordination was established and maintained with the FWS ANWR Office in Fairbanks to obtain data for caribou and other big game species resulting from that agency's studies under section 1002, ANILCA, on the ANWR. Coordination will continue to allow review and input by FWS through the preparation and completion of the study and the development of final recommendations.

U.S. Geological Survey (GS)

The GS will provide mineral potential assessments for BLM to use in the analysis of transportation routes and impacts of oil and gas development on wilderness and wildlife.

The GS has recently acquired geologic data and has purchased geophysical data and will begin interpretation of this data early in 1982. The resource evaluation is anticipated to be completed by November 1982. The GS has also started field studies to assess other mineral potential for the transportation study. These assessments are necessary before BLM can complete its impact analysis on wilderness and wildlife.

National Park Service (NPS)

BLM has established initial coordination with the NPS in Alaska. That agency has indicated that its principal interests involve the Kurupa Lake area and transportation needs associated with the isolated wilderness unit of the Gates of the Arctic National Park within the Central Arctic Area.

State Government

Office of the Governor

The BLM State Director presented a formal briefing on the Central Arctic Area and other ANILCA implementation actions to the Governor of Alaska on November 17, 1981. Further coordination with the Office of the Governor will take place through the preparation and completion of the study and the development of final recommendations.

Alaska Department of Fish and Game (ADF&G)

The ADF&G is the primary source of wildlife data for the Central Arctic Area Study. The Central Arctic Area team has established ongoing coordination to exchange data, consider subsistence issues required by section 810, ANILCA, and obtain review of study efforts throughout the process.

Department of Transportation (DOT)

The BLM established contact with the State DOT regarding access routes claimed by the State under RS 2477.

Department of Natural Resources (DNR)

The BLM is maintaining close coordination with the DNR. Consultation will be critical in light of the State consideration of any land selections in the future in the Central Arctic Area.

Local Government

North Slope Borough (NSB)

The BLM initiated coordination with the NSB in a request for comments on Central Arctic Area issues. The Borough did not voice any specific concerns and will continue to be involved throughout the process leading to the final report.

The BLM has had personal contact with the Borough Mayor and staff members and has discussed the Central Arctic Area in a public meeting in the Borough.

Native Corporations

The BLM included the Arctic Slope Regional Corporation (ASRC) and the village corporations of Atkasook, Kuugpik, Nunamiut, Ukpeagvik Inupiat, Olgoonik and Kaktovik Inupiat, which are affected by the Central Arctic Area in a request for comments on the Central Arctic Area issues. To date, no responses have been received. The BLM plans to follow up with the corporations during the public involvement process.

Alaska Land Use Council (ALUC)

The BLM has presented briefings to the ALUC during its regular sessions in 1981, and will continue to advise the Council on the study preparations and recommendations as they are completed.

INDIVIDUAL STUDIES CONDUCTED

To date individual studies have been conducted in nine categories: archeology, fisheries, hydrology, landcover and sensitive plants, minerals, realty, wilderness, wildlife, and transportation. The objectives of the studies, a summary of the work conducted, and an evaluation of further work needed for each category follow.

A. Archeology

1. Objectives

The archeological inventory conducted in the Central Arctic Area during FY 1981 had three major objectives: 1) to acquaint personnel with the archeology, climate, and terrain of the area; 2) to perform a preliminary assessment of the nature and distribution of sites in and near the proposed ASRC corridor; and 3) to evaluate the situation involved in the NSB'S Traditional Land Use Inventory (TLUI) sites.

2. Summary of Work Conducted

In order to accomplish these goals, inventories were conducted at several locations in the southern foothills region of the North Slope. Portions of the Chandler River, the Siksikpuk River drainage, and the Anaktuvuk River were surveyed, as well as a section of the ASRC corridor west of Galbraith Lake. In the course of surveying these areas, six TLUI sites were field checked. Inventories resulted in the discovery of nine new archeological sites and several locations where one or a few scattered stone flakes were located. All sites recorded during FY 1981 can be classed as either late prehistoric/historic tent ring sites or as small lithic scatters.

3. Evaluation for Further Work Needed

Although work completed has been insufficient to generate definite conclusions, a number of tentative observations can be made.

- a. It appears that site density along the route of the proposed corridor may not be as high as was supposed prior to the field season. Consequently, potential conflicts with cultural resources along this route may be less significant than originally thought.

- b. Further, the sites located during the past season were all relatively small and not of extreme significance, indicating that conflicts may largely be resolved through salvage excavation/collection of sites.
- c. The TLUI sites cannot be reliably defined and delineated in the field through only the efforts of archeologists. Future work intended to find and provide boundaries and management guidelines for such sites should involve the active participation of knowledgeable local persons.
- d. The TLUI sites may mark locations of archeological sites that have little or nothing to do with the use or uses of the area that qualified it for inclusion in the TLUI atlas and until on-the-ground work is done by qualified archeologists, all TLUI sites should be assumed to contain material remains of past human activity.
- e. The preparation of a Class I inventory as detailed in the BLM 8100 Manual should be completed prior to undertaking any future on-the-ground work.
- f. The inventory information supplemented by new data acquired during the FY 1981 field effort provides a reasonable picture of the cultural resources. Detailed site specific inventories will be required for drilling permit applications, seismic operations, right-of-way applications, and related intensive land use decisions. Accordingly, it appears that additional on-the-ground inventories will not provide significant new data for the final plan leading to a decision on whether the Central Arctic Area should be opened for oil and gas leasing.

B. Fisheries

1. Objective

The purpose of the fisheries study was to determine the summer usage by fish of lakes and streams in the Brooks Range foothills of the Central Arctic Area.

2. Summary of Work Conducted

Lakes and streams in the Brooks Range foothills of the Central Arctic Area were inventoried during the period of July 30-August 15, 1981. Lakes and streams were sampled, using standard fish sampling equipment, after a thorough literature review revealed existing data gaps. Twenty-one lakes were inventoried and sections of eight streams were sampled.

3. Evaluation for Further Work Needed

Efforts to sample some of the streams were hindered, and in some cases stopped, by high water conditions causing excessive turbulence and turbidity. Present data, for the most part, are not adequate to assess impacts of site specific developments. Data may be sufficient to permit a general characterization of the fisheries resources of the foothills area. Fisheries inventories for the immediate future should be aimed at sampling stream and lake habitat in the coastal plain area, especially in the vicinity of the proposed Umiat to TAPS corridor to provide a basis for assessing impacts of oil and gas development and transportation on fisheries.

C. Hydrology

1. Objectives

The principal objectives were to identify potentials for winter water availability, assist in determining potential areas for fish overwintering in rivers, and delineate potential hydrologic-related hazards such as aufeis (overflow ice) accumulation areas.

2. Summary of Work Conducted

The FY 1981 effort consisted of a literature search to determine existing information and to identify information gaps. This was followed by a field effort consisting of physical and water quality inventories of lakes within the ASRC corridor and the Umiat to TAPS utility corridor. Rivers within the ASRC corridor were also investigated to determine physical characteristics and potential areas for fish overwintering. Water quality and quantities were determined at various locations on these rivers, and aufeis areas delineated.

Data were collected on 56 lakes within, or adjacent to, the two corridors. The lakes sampled varied in maximum depths from 118 feet to less than 2 feet. The foothill lakes within the ASRC corridor appear to be primarily of glacial origin. Lakes located at higher plateau areas between river drainages generally were clear with depths in excess of 25 feet. Those lakes within the floodplains of the rivers had depths that were much more variable and generally shallower than adjacent plateau lakes. Those lakes investigated within the Umiat to TAPS corridor were generally much shallower with maximum depths rarely exceeding 10-12 feet. Water clarity (turbidity) was generally poor. With the exception of the turbidity in these shallow lakes, water quality was good in all lakes surveyed.

River surveys within the ASRC corridor revealed generally good water quality conditions with the exception of turbidity during high flow periods. During the study period, river flows fluctuated widely, often within a one or two day period. Most of the river segments surveyed had no pool areas. It is uncertain whether any of these areas are hydrologically sufficient to support overwintering fish. Most rivers within the corridor were fast flowing (3-8 feet/sec.) with many long stretches of rapids. Most rivers were single or split channelled with short segments of braided channels. Often the type of channelization changed as flows increased or decreased.

3. Evaluation for Further Work Needed

Lake surveys should be continued but greater emphasis should be spent on floodplain lakes within the ASRC corridor because of their variability. In addition, surveys within the Umiat to TAPS corridor should be continued. This is partly because of the large number of lakes in this area, but also because winter water availability is more critical here, and a better understanding of lake conditions is needed. Aufeis areas should be further studied using remote sensing techniques with follow-up field checks to reduce costs.

D. Land Cover and Sensitive Plants

1. Objectives

- a. To provide information on the location, distribution, and acreage of the vegetated and nonvegetated land cover types in the Central Arctic Area.
- b. To search likely habitats for sensitive and rare plants.

2. Summary of Work Conducted

Field work was conducted from July 7 to July 20, 1981. The purposes of the field work were: 1) reconnaissance of the landcover types in the Central Arctic Area to learn the major communities and their general ecologic distributions, and 2) to establish the photo interpretation characteristics of the 1:60,000 color infrared photographs selected to cover the range of topographic and vegetative variability. Sites were visited, and written descriptions were made of the vegetation communities. Fifteen major cover types were identified in the study area. These communities roughly correspond with Levels II - III of the 1981 revision of the Preliminary Classification System for Vegetation of Alaska (Viereck et al., 1981).

During field landcover mapping operations, all areas at the helicopter stops were searched for rare or sensitive plants. Most of the stops were selected because they are representative of large areas of land cover. These are not unusual habitats and, therefore, are not likely to contain rare plants. Time on the ground was usually not sufficient to cover a large area. Several stops planned specifically for rare plant searches were aborted due to poor weather or a shortage of flying time. No rare or sensitive plant taxa were found.

3. Evaluation for Further Work Needed

Field work this year was preparatory to a supervised computer analysis of the satellite imagery for the Central Arctic Area. These data can be placed in a digital data bank with existing data on topography and then manipulated to produce maps showing combinations of specific features, such as, all brush types on south facing slope or all slopes greater than 6 percent.

Additional field work is necessary to refine cover type descriptions and to evaluate the accuracy of the computer-aided classification.

Without the computer analysis and additional field work, the only products will be a 1:250,000 scale manual interpretation of the satellite imagery and preliminary descriptions of vegetation cover types.

This year's searches for sensitive and rare plants in the Central Arctic Area were not extensive enough to reach any conclusions regarding presence or absence of rare plants.

E. Minerals

This field effort was aimed towards documentation of selected geomorphic structures, mineral resource occurrences, geologic hazards, existing transportation routes and exploration oil well sites. The information that was collected will provide geologic background for the final impact analysis to supplement mineral potential assessments by the GS. Additionally, the field work identified geologic hazards that must be considered in evaluation of transportation routes, including the designated ASRC corridor under section 1431(j), ANILCA.

1. Objectives

- a. To research the geologic literature for both oil and gas and other mineral resource information and compile these data on 1:250,000 scale map overlays and short narrative formats.
- b. To conduct field work for the purpose of examining selected mineral resource locations in order to assess the nature of the geologic occurrence.
- c. To examine proposed and existing transportation routes and corridors for the purpose of identifying potential geologic hazards along these routes.

2. Summary of Work Conducted

A search of the geologic literature resulted in the compilation of 32 key references from a field of over 1,200. Six 1:250,000 scale overlays were processed showing mineral resource locations, bedrock geology, surficial geology and areas of oil and gas interest. To accompany these overlays, a short narrative describing the geologic nature of the various resource occurrences was written. In the field, photographic coverage by 35 mm slides was done to document selected geomorphic, geologic structure, resource occurrences, geologic hazards, existing transportation routes and exploration oil well sites.

3. Evaluation for Further Work Needed

Additional data are needed to document and locate the other mineral resource occurrences in the Central Arctic Area and alternative transportation routes.

F. Realty

1. Objectives

The objectives of the realty program were to depict the land ownerships (including split estates) and transportation routes claimed by the State under RS 2477, and to scope out future realty needs.

2. Summary of Work Conducted

Overlays for 1:250,000 scale maps which depict the land status of the study area were created. A search for studies about transportation through the Central Arctic Area revealed that very little planning has been done.

3. Evaluation for Further Work Needed

The land status of various transportation routes (exclusive of TAPS and Dalton Highway) needs evaluation.

G. Wilderness

1. Objective

The objective was to locate the existence or non-existence of areas containing wilderness characteristics that meet the criteria established by the Wilderness Act, and to test supplemental wilderness inventory criteria for the Central Arctic Area.

2. Summary of Work Conducted

The field review of the Central Arctic Area consisted of eliminating areas of non-Federal ownership. All remaining areas meet the basic wilderness characteristics, with the exception of areas designated non-wilderness within the Utility Corridor. Inventory data were collected at 68 representative sites throughout the Central Arctic Area. Data collected included: a) landscape analysis consisting of documentation of the usual as well as striking landscapes, recording of visual boundaries, recordation of examples of impacts, etc.; b) photographs and sketches of the visual ranges at each sample point; and c) a description of the wilderness characteristics (naturalness, solitude, primitive or unconfined types of recreation), and documentation of special features. Preliminary comparisons were made between ecosystems within the Central Arctic Area and similar ecosystems in the adjacent wilderness units of the Gates of the Arctic National Park and the ANWR.

3. Evaluation for Further Work Needed

The field review for wilderness was completed during the 1981 season. Evaluation of the field inventory information will be completed in FY 1982. The preliminary evaluation results and draft recommendations for areas identified as potential wilderness will be submitted for State, local governmental and public review. This will include review of the supplemental criteria. Final evaluation of impacts of oil and gas development on wilderness will be coordinated with the findings of the mineral assessment to be prepared by GS and with other resource analyses as they are completed.

H. Wildlife

1. Objective

To evaluate available literature on wildlife and conduct field evaluations in the ASRC Corridor.

2. Summary of Work Conducted

There are large data gaps for most of the species in the area. The 1981 field season wildlife survey was limited to determining the distribution and size of the Dall Sheep population and identifying raptor nest sites associated with the ASRC Corridor.

The Dall Sheep inventory was conducted in late July 1981, with approximately 150,000 acres of potential habitat surveyed on the west side of the TAPS corridor. There were 150 animals counted during the two-day inventory.

Approximately 250 miles of rivers and 200,000 acres of potential raptor habitat were surveyed. Thirty-five active nest sites were located including four Peregrine falcon nests.

3. Evaluation for Further Work Needed

Additional data are needed on the resident herd. Existing data on caribou use of the TAPS corridor, the ANWR and the NPR-A will be evaluated for applicability to the Central Arctic Area.

I. Transportation

Field study efforts were concentrated in the vicinity of proposed transportation routes. Additional effort will be required to tie together data from areas off the Central Arctic Area, as well as on the Central Arctic Area, to the transportation analysis required by section 1006 ANILCA. The Department of Transportation and GS will be brought into this part of the study.

SUMMARY OF WORK PLANS

Information collected from ongoing literature reviews and the field effort will be used to further focus on issues or areas of special concern or management needs. Future work will concentrate upon data needed to evaluate the consequences of oil and gas leasing, exploration and development within Central Arctic Area and for transportation across the Central Arctic Area from the ANWR on the east and the NPR-A to the west.